

### **DETAILED ACTION**

1. This Office action is in response to Applicant's preliminary amendment filed 8/11/2006 and telephone interview 12/02/2009.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### **EXAMINER'S AMENDMENT**

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Martin Moynihan on 12/02/2009 (Examiner left a message. Mr. Moynihan called back on Sunday 12/06/2009).

The application has been amended as follows:

1. (Currently amended) A method of detecting a predetermined condition of a panel, comprising:

transmitting a cyclically-repeating energy wave through a transmission channel in said panel consisting solely of the material of said panel;

measuring the transit time of said cyclically-repeating energy wave from said first location to said second location;

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and utilizing said measured transit time to detect said predetermined condition of the panel;

wherein said panel is a structural panel, and said condition to be detected is a force on, the temperature of, a deformation in, the fatigue condition of, or a fracture in said structural panel.

2. (Canceled)

11. ( Currently Amended) Apparatus for detecting a predetermined condition of a panel, comprising:

a transmitter at a first location on said panel for transmitting a cyclically-repeating energy wave through a transmission channel in said panel and consisting solely of the material of said panel;

a receiver at said second location on said panel for receiving said cyclically-repeating energy wave;

and an electrical system designed for measuring the transit time of the cyclically-repeating energy wave through said transmission channel from said first location to said second location and for thereby producing an indication of the condition of the panel;

wherein said panel is a structural panel, and said electrical system is designed to provide an indication of a force on, the temperature of, a deformation in, a fatigue condition of, or a fracture in the structural panel.

12. (Canceled)

In claim 15, line 1, replace number 15 with number 14 (To make the claim depends upon claim 14).

***Allowable Subject Matter***

4. Claims 1, 3-11, 13-20 are allowed.
5. The following is an examiner's statement of reasons for allowance:

The prior art of Baumoel (5,271,267) discloses method that propagates, from a transmitter, sonic energy into the fluid in the container; receiving the sonic energy at a reception site after a defined time delay determined by the nature of the fluid in the container; determining the time and the sonic propagation velocity of the sonic energy in the fluid from the; and determining the fluid property from the relationship between the sonic propagation velocity in the fluid and temperature.

The prior art of Bischoff et al. discloses the sonic transducer 25, transmits a pulse through the ink to a second sonic receiving transducer 28, before the clock pulse positive going trailing edge occurs, applies an output to the one-shot circuit 32. One-shot circuit 32 applies a pulse of a predetermined duration, exemplified by 150 microseconds, to a delay circuit 34. The output of the delay circuit is applied through an amplifier driver 36 to the valve 12, and maintains it open for the interval determined by the interval of the one-shot. Thereby, a predetermined amount of solvent is added to the ink in the ink reservoir 14.

However, the prior art of record does not teach or suggest, in combination with the rest of the limitations of the claims,

a method of detecting a predetermined condition of a panel having the steps of utilizing the measured transit time to detect the predetermined condition of the panel; wherein said panel is a structural panel, and said condition to be detected is a force on,

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the temperature of, a deformation in, the fatigue condition of, or a fracture in said structural panel, as recited in the independent claim 1;

an apparatus for detecting an predetermined condition of a panel having an electrical system designed for measuring the transit time of the cyclically- repeating energy wave through said transmission channel from said first location to said second location and for thereby producing an indication of the condition of the panel; wherein said panel is a structural panel, and said electrical system is designed to provide an indication of a force on, the temperature of, a deformation in, a fatigue condition of, or a fracture in the structural panel, as recited in the independent claim 11.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### **Contact Information**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Q. Nguyen whose telephone number is (571) 272-2234. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. F. Gutiérrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Vincent Q. Nguyen/  
Primary Examiner, Art Unit 2831

December 6, 2009